

## ROUTING SWITCH DETECTING CHANGE IN SESSION IDENTIFIER BEFORE RECONFIGURING ROUTING TABLE

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### ABSTRACT OF THE DISCLOSURE

An automatic network topology identification technique is described  
10 herein. Each node in the network periodically or constantly transmits its unique  
address to its neighboring node. Once a node receives a different message from its  
neighbor, the node identifies a topology change in the network. In one  
embodiment, a current topology is associated with a session number. When a  
change in the topology is detected, the detecting node increments the session  
15 number and broadcasts the change in topology. The other nodes, detecting the  
changed session number, now know that there has been a change in the network.  
In response, the nodes in the network modify routing tables and other information  
stored at the node related to the topology. In one embodiment, the technique is  
used to reassign shortened addresses to each device on the network to support a  
20 dual-addressing mode of the network. The dual addressing mode substitutes  
reduced-length addresses (referred to as short addresses) for standard addresses  
(referred to as long addresses) for traffic whose source or destination is internal to  
a given virtual network topology. The required length of short addresses used for a  
given virtual topology is dependent on the number of devices reachable within the  
25 topology.